

## CLAIMS

I claim:

1 1. A system for marking a digital recording, wherein the  
2 digital recording includes a plurality of tracks,  
3 comprising:

4 a mechanism for dividing the digital recording into a  
5 plurality of sections and associating a random number with  
6 each section;

7 a mechanism for calculating an identifier as a  
8 function of the associated random numbers; and

9 a watermarking mechanism for watermarking sections  
10 within a block of sections, wherein the watermark for each  
11 section includes the random number associated with the  
12 section and a portion of the identifier.

1 2. The system of claim 1, wherein the digital recording  
2 includes a music recording, and the plurality of tracks  
3 include individual songs.

1 3. The system of claim 1, wherein a length of each section  
2 is less than a length of each track, and the number of  
3 sections is greater than the number of tracks.

4. The system of claim 1, wherein the identifier is a hash.

1 5. The system of claim 1, wherein the watermarking  
2 mechanism splits the identifier among the sections within  
3 the block.

1 6. A system for verifying a digital recording by ensuring  
2 a completeness of the digital recording, comprising:  
3 a mechanism for reading watermarks from each of a  
4 plurality of sections on the digital recording and  
5 extracting a first and second part from each watermark;  
6 a mechanism for calculating a first identifier as a  
7 function of the extracted first parts;  
8 a mechanism for calculating a second identifier based  
9 on a subset of the second extracted parts; and  
10 a mechanism for comparing the first identifier and the  
11 second identifier.

1 7. The system of claim 6, wherein the first part of each  
2 watermark is a random number.

1 8. The system of claim 7, wherein the second part of each  
2 watermark is a hash of a complete set of random numbers  
3 from an original copy of the digital recording.

1 9. The system of claim 6, further comprising a mechanism  
2 for terminating further processing of the digital recording  
3 if the first and second identifier do not match.

1 10. A program product stored on a recordable media for  
2 marking a digital recording having a plurality of tracks  
3 that, when executed, comprises:  
4 means for assigning a value to each of a plurality of  
5 sections within the digital recording;  
6 means for calculating an identifier as a function of  
7 all of the assigned values; and  
8 means for determining a watermark for each section  
9 within a block of sections, wherein each watermark includes  
10 the value assigned to the section and a portion of the  
11 identifier.

1 11. The program product of claim 10, wherein each value  
2 is a random number.

1 12. The program product of claim 10, wherein the  
2 identifier is a hash.

1 13. The program product of claim 10, wherein the block of  
2 sections consists of one section and the portion of the  
3 identifier consists of the entire identifier.

1 14. A program product stored on a recordable media for  
2 verifying a digital recording that, when executed,  
3 comprises:

4 means for reading watermarks from each of a plurality  
5 of sections on the digital recording and extracting a first  
6 part and a second part from each watermark;

7 means for calculating a first identifier as a function  
8 of the extracted first parts;

9 means for calculating a second identifier based on a  
10 subset of the second extracted parts; and

11 means for comparing the first identifier and the  
12 second identifier.

1 15. The program product of claim 14, wherein the first  
2 part of each watermark is a random number.

1 16. The program product of claim 15, wherein the second  
2 part of each watermark is a hash of a complete set of  
3 random numbers from an original copy of the digital  
4 recording.

1 17. A method for preventing unauthorized use of a digital  
2 recording, wherein the digital recording includes a  
3 plurality of tracks, comprising:  
4       encoding the digital recording with the steps of:  
5           partitioning the digital recording into a  
6 plurality of sections;  
7           generating a random number for each section;  
8           calculating an identifier as a function of all of  
9 the generated random numbers;  
10          splitting the identifier into m partitions,  
11 wherein m is an integer;  
12          grouping the sections into blocks of m sections;  
13 and  
14          watermarking each section in each block with the  
15 random number for the section and one of the m  
16 partitions.

1 18. The method of claim 17, further comprising:  
2       verifying the digital recording with the steps of:  
3           reading the watermark from each section;  
4           extracting the random numbers from each section;  
5           recalculating the identifier as the function of  
6 all of the extracted random numbers;

7           extracting each of the m partitions from a first  
8    block of sections;  
9           coalescing the m partitions into a second  
10   identifier; and  
11           comparing the recalculated identifier with the  
12   second identifier.

1   19. The method of claim 18, comprising the further step of  
2   terminating processing of the digital recording if the  
3   recalculated identifier does not match the second  
4   identifier.

1   20. The method of claim 17, wherein the identifier is a  
2   hash.

1 21. A watermarked digital recording, comprising:  
2 a plurality of tracks; and  
3 a plurality of sections commingled with the plurality  
4 of tracks, wherein each section includes a random value and  
5 a value that is dependent on the random values for all of  
6 the sections.